Customer Care Solutions
DTX-3 Series Transceivers

Disassembly and Troubleshooting

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Introduction

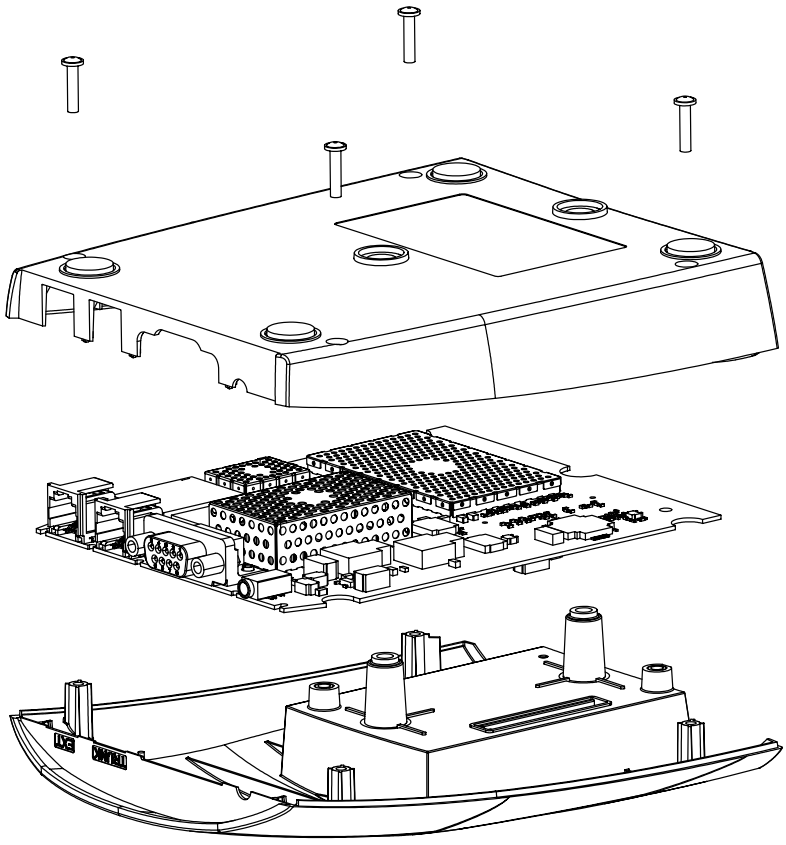
The purpose of this document is to help in hardware troubleshooting of the Nokia 32 PBX Connectivity Terminal.

TME-3/TME-4 troubleshooting is described in the TME-3/TME-4 manual.

DTX-3 module is not designed to be repaired, except for the Application Interface Connector.

Disassembly, DTX-3

Figure 1: DTX-3 disassembly



Troubleshooting

General

The purpose of this document is to help the service point to solve which part of the radio is faulty. The service policy with the Nokia 32 connectivity terminal is, that only the TME-3/TME-4 will be repaired.

Both TME-3 and DTX-3 covers can be replaced if necessary.

Equipment needed:

- SIM card without PIN query
- ACW-5 Adapter
- ACW-5 mains cable
- ACW-5 power cable
- A landline telephone
- A Nokia 32 (including TME-3/TME-4 and DTX-3 modules)
- T-piece
- DKT-7A service cable
- CA-15DS audio test cable
- SCS-24 audio test cable
- Personal computer (PC)

Software needed:

- Wintesla sw for DTX-3

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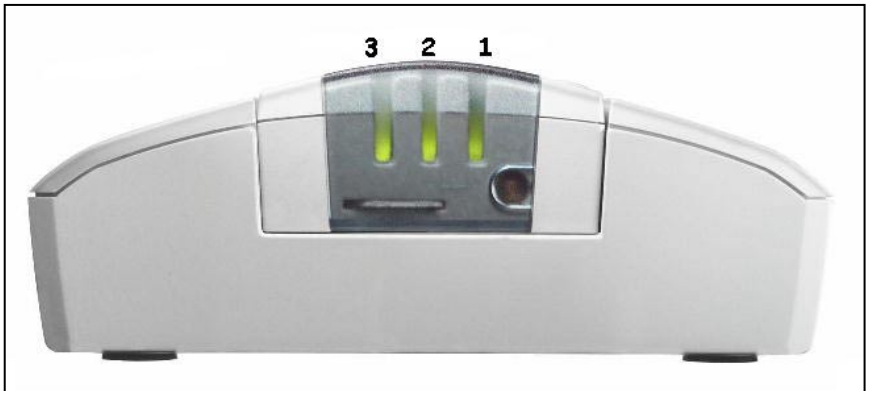
Visual overlook

The LED indicators are split into two parts:

Figure 2: LED indicators



LED indicators 2&3 are used to tell in which mode the line adapter is at the moment. LED indicator 1 is used to tell the state of the embedded GSM terminal. At least one LED indicator from both parts should be on or blinking. If e.g. both LED indicator 2 and LED indicator 3 are off, the fault most probably is in the application module.

Initial connections:

1. Insert SIM card to TME-3/TME-4.

2. Attach DTX-3 to TME-3/TME-4.

3. Connect CA-15DS cable between one input port of T-piece and EXT connector.

4. Connect SCS-24 cable between the other input port of T-piece and TRUNK connector.

5. Connect cable DKT-7A between output port of T-piece and PC.

6. Connect power cable between DTX-3 and ACW-5.

7. Connect mains cable between ACW-5 and mains plug. See the instructions on the bottom side of the adapter.

8. Choose Testing -> Self Tests... from Wintesla.

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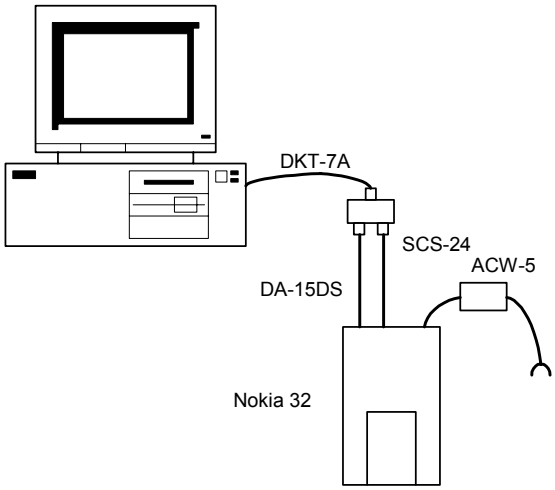

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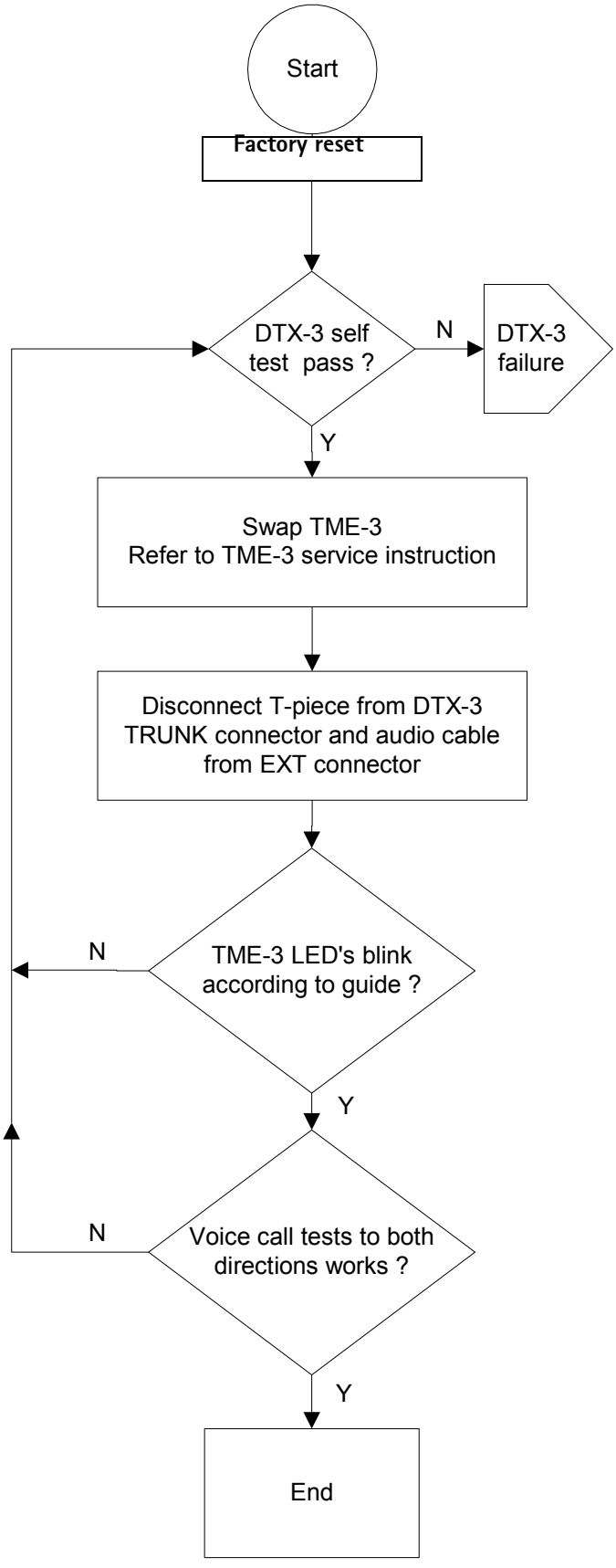
Troubleshooting flowchart for Nokia 32 and TME-3/TME-4



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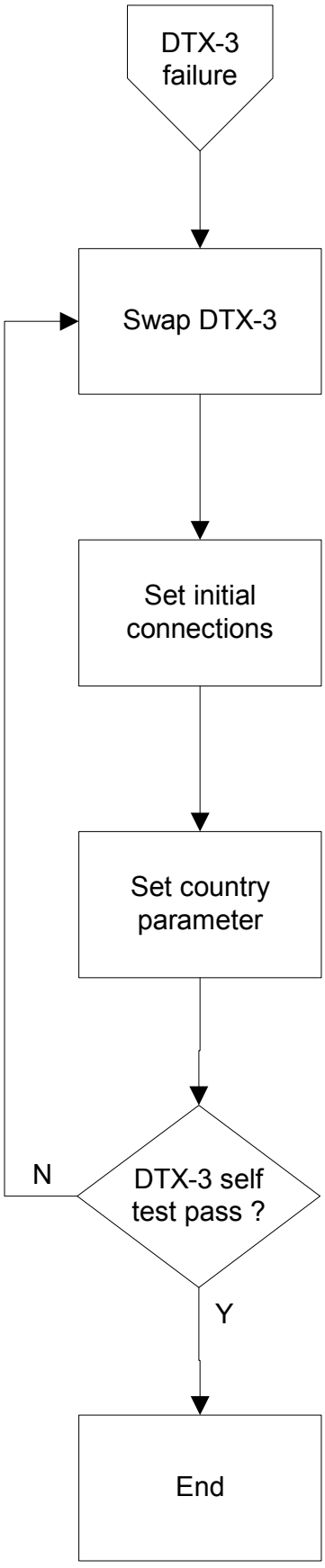
Troubleshooting flowchart for DTX-3



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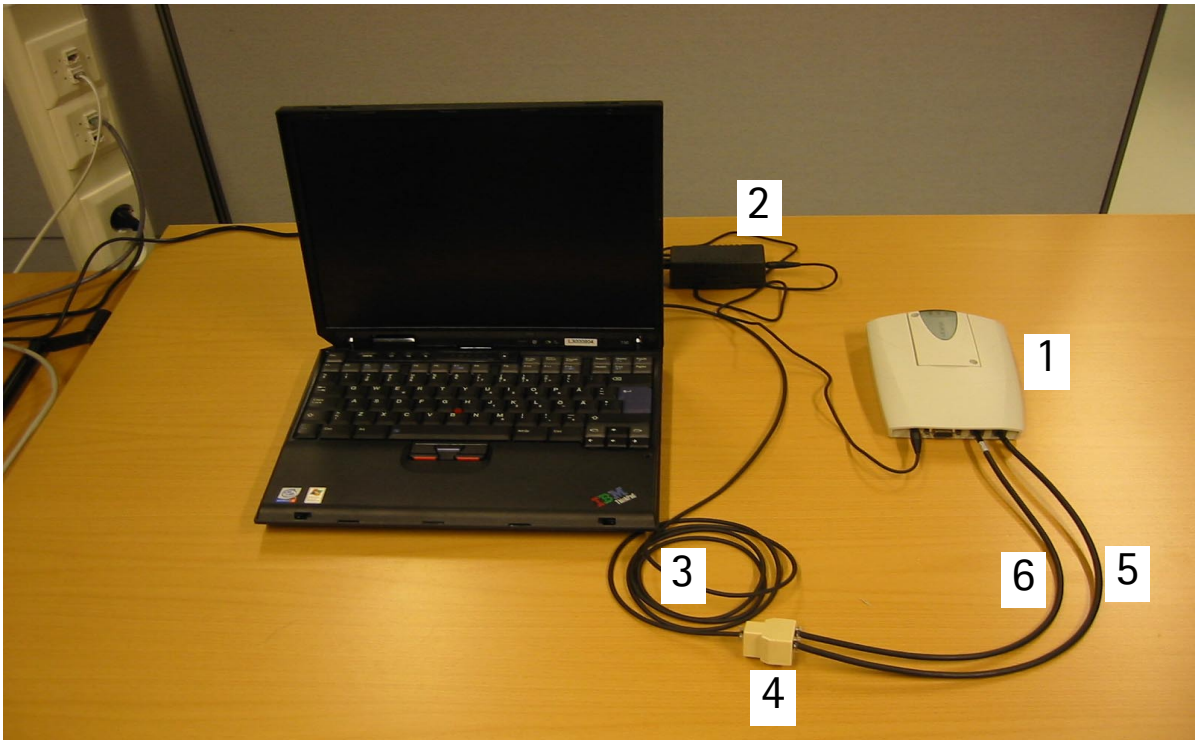
Testing with WinTesla service software

Set the Initial connection setup.

Figure 3: Test equipment set-up



No.	Type	Description	Code
1	DTX-3	APPLICATION MODULE	0630596
2	ACW-5	POWER SUPPLY	0630526
3	DKT-7A	MBUS CABLE	0730211
4		T-CONNECTOR	4626134
5	CA-15DS	LINE ADAPTER TEST CABLE	0730302
6	SCS-24	LINE ADAPTER TEST CABLE	0730223

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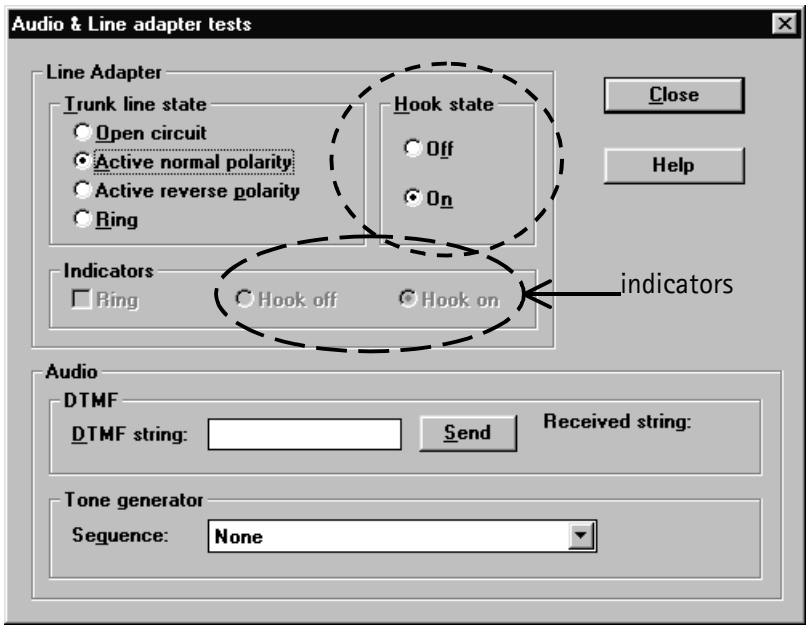
WinTesla tests

Testing of Line adapter circuits

Choose Testing -> Audio -> Line Adapter...

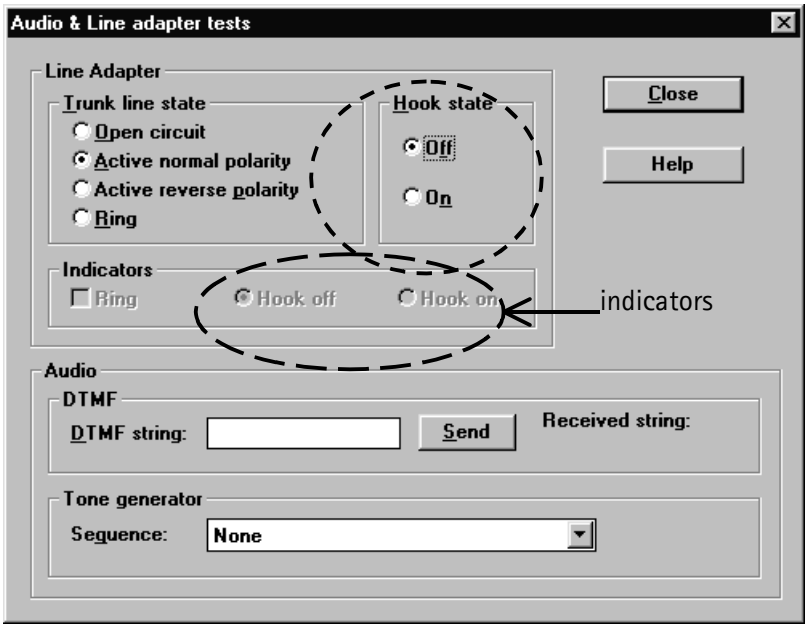
Hook state indicator

Figure 4: Hook on/off test window 1



Check that the Hook off/on indicator state will change when you change the hook state. If not, the DTX-3 is faulty.

Figure 5: Hook on/off test window 2



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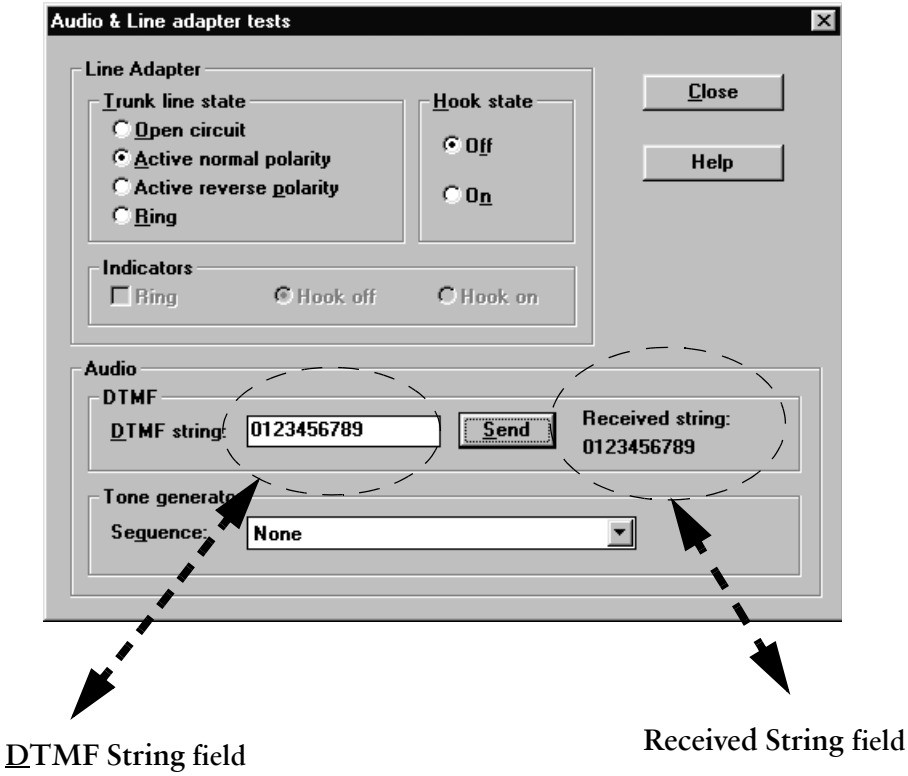
DTMF receiving and transmitting

Write some numbers to the **DTMF string** field. Change the hook off state to **'Off'**, press the **Send** button and listen from the earpiece the DTMF tones. Check also from the 'Received string:' row, that all numbers that you just selected were transmitted.

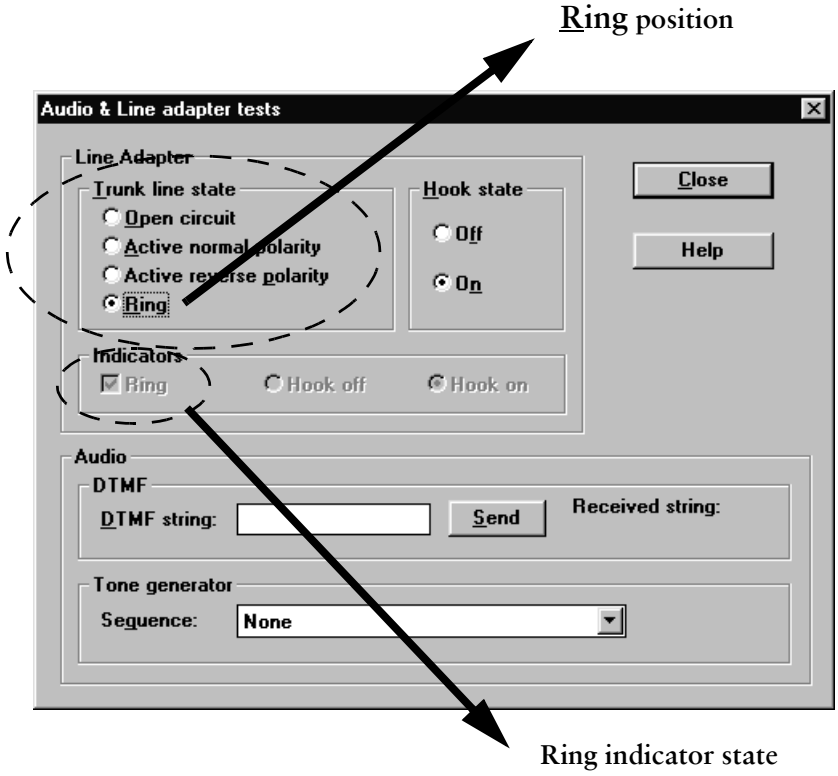
Figure 6: DTMF test window



Ringing Voltage Indicator

Change the 'Trunk line state' selection to the **Ring** position.

Figure 7: Audio&Line Test window



Check that also the state of the Ring indicator changes (it might take few seconds). If the indicator will not change it's position, change the 'Trunk line state' choice to it's original setting, and try again couple of times. If the indicator will not change it's position, the DTX-3 is probably broken.

Activate the HF-state from the land-line telephone, or take the earpiece to listen the signal tones. From the **Tone generator** field you can select different tones to be listened.

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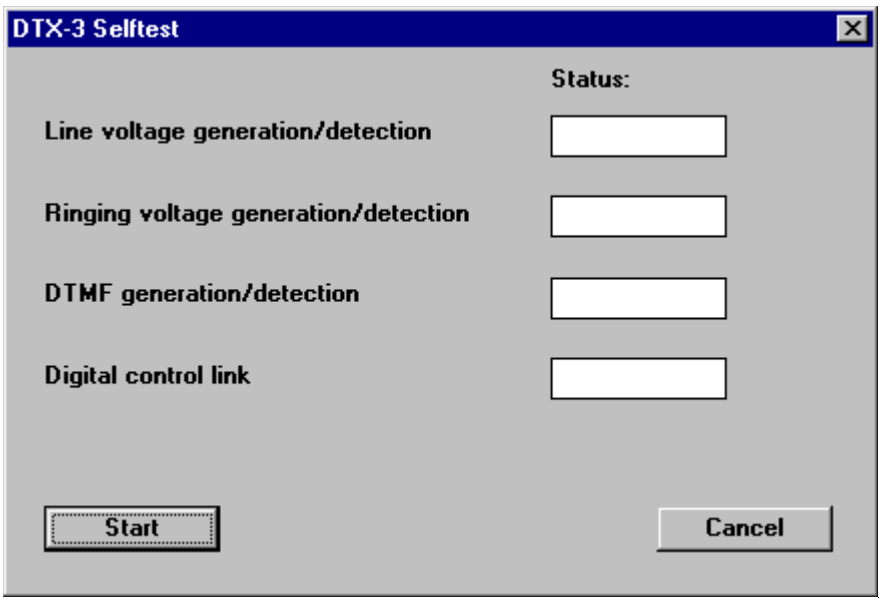
Self tests

The following build in selftests will be supported by Nokia 32 in addition to Nokia 22 selftests:

- Line voltage
- Ringing generation/detection
- DTMF generation/detection
- GSM link test

For more detailed information see Ratti SW Selftest Functional Specification .

A dialog box should be developed to start selftests.



The result of individual selftest should be stated clearly with passed/failed/not executed and the overall result as well.

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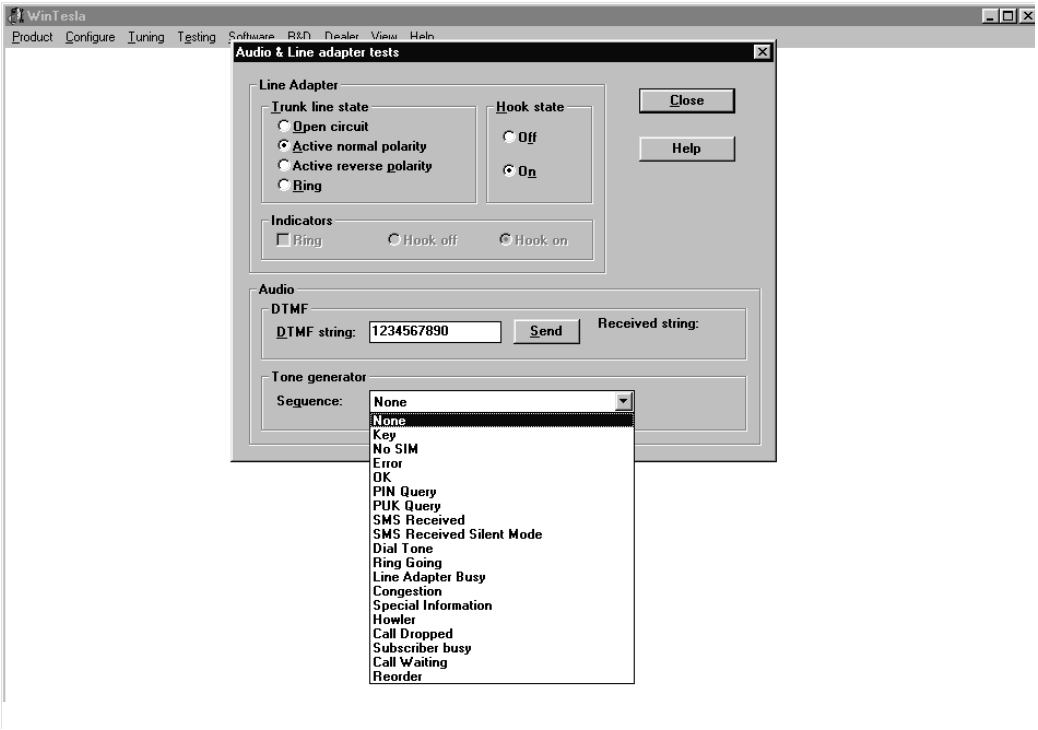
Figure 8: Audio codec Test window



If you can not hear these tones, the audio codec is probably faulty.

Try to make also a test call with the land line telephone.

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